

With the Author's consent

NOTES

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ON

CLINICAL MEDICINE.

BY

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No. I.

ON DIPHTHERIA.

No. II.

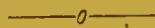
ON A CASE OF AORTIC ANEURISM, IN WHICH A COMMUNICATION WITH THE PULMONARY ARTERY WAS RECOGNISED DURING LIFE BY PHYSICAL SIGNS.

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JOSIAH ALLEN, JUN., 9 & 10, LIVERY STREET.

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By the same Author.

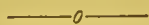


AN ESSAY UPON THE SYMPTOMS, PATHOLOGY, AND
TREATMENT OF RETRO-UTERINE HÆMATO-
CELE. ILLUSTRATED BY NUMEROUS CASES,
ORIGINAL AND SELECTED.

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(In preparation.)

ON DIPHTHERIA.



FOUR years ago I published a fragmentary memoir upon diphtheria, intending to finish it at an early date. But much remains yet to be done before a complete account of this disease shall be possible. The fact that a great majority of cases occurs in private practice, where facilities for minute observation during life are scanty, and *post mortem* examinations are constantly refused, is one principal cause of our deficient knowledge. Another is, that public attention has not yet been sufficiently attracted to certain points, the determination of which is essential to any satisfactory history of the disease. In the hope of procuring for these points that investigation which is due to them, and which most assuredly they will eventually obtain, I venture to submit the following propositions to the profession. The style adopted is certainly open to the imputation of curtness; but it seems to me that by divesting the subject as far as possible of extraneous matter and verbiage, those who desire to do so will the more readily arrive at my meaning. I have abstained from particularising the data upon which these conclusions are based. Some of them are received medical dogmas. With regard to the others, the continued prevalence and fatality of diphtheria will enable every one to judge for himself whether or no it presents the features and phenomena here indicated, and whether the practical conclusions here drawn are wholly, partially, or at all justifiable. I have the satisfaction of knowing that the principles and practice here recommended are most highly approved by those practitioners who have most fully tested them at the bedside. I have only to add that, in the hope of con-

centrating attention upon certain points in the natural history of the disorder, many others of great interest have been entirely omitted.

1. At the commencement of the present epidemic, being dissatisfied with previous *post mortem* examinations, which had been limited to an investigation of those parts whose tissues are continuous with those of the throat, and having noted phenomena which were not thereby explained, I determined, when opportunity should offer, to examine the state of other organs whose tissues were not so continuous.

2. The first *post mortem* furnished me with kidneys (of which I retain a drawing) as much altered in appearance as any that we find after death from scarlatinal dropsy.

3. Obvious pathological analogies led me then to suspect that such a condition would be attended with albuminuria during life. The examination next day of the urine of a patient under the care of Mr. *Robins* showed that it contained albumen. The frequent occurrence of albuminuria in diphtheria has since been universally recognised.

4. Curiously enough subsequent dissections have but rarely furnished me with kidneys so conspicuously altered as these first ones. The changes are more commonly microscopical; consisting of crowding and opacity of the epithelium, which is most readily detached and rapidly disintegrates.

5. Casts of various kinds are to be found in some specimens of the albuminous urine of diphtheria.

6. This albuminuria and these anatomical alterations of the kidney are important as showing---

- (a) That the disease does not spread solely by continuity of tissue, as had been previously believed;
- (b) That in some cases the disorder has a tendency to migrate; and in such there is more reason to apprehend croup and other complications than in cases where this migratory tendency is not apparent.

7. Albuminuria as a symptom of disease is important from the fact of its being frequently, though not necessarily, connected

with and dependent upon conditions which impair the excretory action of the kidneys.

8. In many cases there are indications of diphtherical albuminuria being so associated.

9. These indications are: diminution of urine in quantity; suppression of lithates; nervous symptoms---as indifference to surrounding objects, somnolence, coma---coincidentally with the commencement of albuminuria, and not referable to any other known cause but the kidney complication.

10. The commencement of the albuminuria may be attended by an increase of the pyrexia, unexplained by any increase of the local disorder or other efficient cause.

11. These symptoms are relieved by increased urinary excretion.

12. Albuminuria is not necessarily attended by any obvious symptoms of an unfavourable character.

13. An imperfect elimination of urinary elements may be unattended by albuminuria. In one case, sudden diminution of the urinary secretion without albuminuria was attended by swelling and pain of the carpal joints (rheumatic?). The symptoms described in No. 9 are developed coincidentally with this imperfect elimination.

14. I have not observed the early presence of albumen in the urine, which, from the concurrent testimony of trustworthy observers, no doubt frequently occurs. Two explanations of this fact offer themselves. In the first place, most of my cases have been seen in consultation, which is demanded in the majority of cases only when fatal symptoms have already supervened. Secondly, my treatment has long been directed to the prevention of kidney complication.

15. Apart from its early occurrence, there seems to be a special tendency to albuminuria about the seventh or eighth day, at which time the disorder has a natural tendency to terminate. Under such circumstances it is to be looked upon as a critical phenomenon. It may occur at any period.

16. Kidney affection commonly precedes other complications, such as croup and purpura.

17. More exact observation upon the amount of urinary

excreta, before, during, and after intercurrent albuminuria, are much wanted. Also in cases where albuminuria does not occur.

18. If there be retention of urinary elements in the system, it is probable that it tends to induce other complications. (See Dr. *Parkes*' Lectures on Pyrexia.)

19. I have found specimens (of which I retain drawings) of anatomical alterations of the spleen, which has in some instances been found solidified, and of a pinkish-buff colour.

20. The microscope showed that in such spleens there was an unorganised, hyaline, semi-solid material filling the interspaces of the trabeculæ.

21. I have also found alterations of the spleen such as Dr. *Habershon* has described as occurring in cases of purpura.

22. In no case has manifest alteration of the spleen been found after death where purpura had not been observed during life.

23. Some cases of purpura have been seen in which I could not undertake to say that the spleen was abnormal.

24. There is no constant proportion between the severity of the purpuric symptoms and the amount of splenic change.

25. The vast majority of fatal cases have presented croupy symptoms in the last stage, but many would probably have been fatal without the croup.

26. In no case that I have dissected was the laryngeal exudation continuous with the faucial.

27. In no case of croup that I have dissected has the exudation failed to extend beyond the bifurcation of the trachea. In most instances it has extended into the minute ramifications of the bronchi.

28. The tracheal and bronchial exudation has varied in consistency from a very firm membrane to a pasty granular layer.

29. In two cases, besides (other?) purpuric symptoms, I found after death nodules of pulmonary apoplexy.

30. In one case I thought that there was some hyaline exudation in the supra-renal capsules. In that case, and in another, these organs were intensely vascular.

31. We are justified by the preceding observations, as well as by other well-known symptoms of the disease, in looking upon

diphtheria as a zymotic disease; not as *Bretonneau* conceived it to be, a local disease spreading by continuity of tissue, and only affecting the system in a secondary manner.

32. I have never stated, and I am not prepared to state, my opinion upon the relation, if any, between diphtheria and scarlatina.

33. To those who find less difficulty in coming to a positive conclusion on the point, I beg to recommend the following considerations :

- (a) Scarlatina and diphtheria may be associated.
- (b) Scarlatina is not necessarily accompanied by efflorescence, or by noticeable fever.
- (c) Diphtheria may probably affect the system without producing any throat exudation.
- (d) Scarlatina may recur.
- (e) Certain forms of scarlatina may be *accompanied* by albuminuria.
- (f) Scarlatinal albuminuria does not necessarily produce dropsy; dropsy, in fact, is the exception in albuminuria *accompanying* scarlatina.
- (g) Any occasional form of a specific fever may become the type of an epidemic.
- (h) Granting that scarlatina and diphtheria are both zymotic disorders, we do not know what is the nature of their respective poisons.

34. Local treatment exerts no known influence upon the general course of specific fevers.

35. The true rule of practice in such diseases is to obviate the tendency to death.

36. The tendency to death in diphtheria is sometimes by asthenia, directly induced by the blood-poison; sometimes by complications, of which the earliest is generally a kidney affection, interfering with urinary elimination. We must therefore eliminate the poison, and if possible *prevent* the complications.

37. In pyrexial disorders, one of the most constant and mysterious phenomena is the quantity of water disposed of by the system. (See *Parkes* on Pyrexia.)

38. In diphtheria the quantity of ingesta will be commonly small if the patient be allowed to consult his own convenience.

39. Water is essentially necessary to the performance of the urinary functions.

40. Concentration of the urine is equivalent to kidney irritation.

41. Diphtherical albuminuria is often preceded by urine of high specific gravity. The supervention of albuminuria may fail to reduce this.

42. It is often preceded by the deposits of lithates, showing a comparative paucity of the urinary water.

43. All plans of treatment which have been adopted on the large scale for the treatment of diphtheria have embraced the ingestion, in large quantities, of fluid nutriment as an important if not essential element.

44. By the copious administration of pure water or diluents in diphtheria, the urine may be often enormously increased in quantity, without corresponding diminution of its specific gravity, which is indeed sometimes actually higher at the same time that the quantity is increased.

45. This seems to indicate that the detritus of interstitial metamorphosis had been previously insufficiently eliminated.

46. I recommend the ingestion of bland fluids in as great quantity as the patient will take: half a pint every hour or two, if possible, in the case of adults.

47. To avoid chills, I recommend that in all cases the patients should be clothed from head to foot in a flannel gown, and kept in bed. I believe that the adoption of this plan would have saved almost innumerable lives, more especially in slight cases.

48. Assuming the presence of a substantive poison in the system, we know no drug which will act as a direct eliminant but iodide of potassium. It positively eliminates lead, and we may presume that it positively eliminates syphilis.

49. I employ iodide of potassium in two, three, or four grain doses, every two or three hours. I have been in the habit of conjoining with it chlorate of potash in five to ten grain doses.

50. I have known no instance of a fatal termination where this plan of treatment had been carried out. I have known no

instance of serious symptoms or of secondary paralysis supervening where this plan had been rigorously carried out. The difficulty, especially with children, is in insuring a copious supply of fluid.

51. This plan exercises a speedy and salutary influence upon the general symptoms of the disease. The exudation often diminishes with extraordinary rapidity. Essential fevers run a definite course, and can be rarely if ever cut short. Till the disease has gone we cannot be free from the danger of complication. Hence the immense importance of continuing the treatment after immediate relief has been obtained.

52. Aqueous injections may be employed to supplement life ingestion by the mouth; but this is a plan of very inferior efficacy. If deficiency of urine be present, bitartrate of potash, sinapisms to the loins, warm bath, and solution of acetate of ammonia help to restore it.

53. This general plan of treatment does not preclude other remedies in special cases, or to meet special indications.

54. Where it has been carried out I have not found a necessity for stimulants, nor have I found that these, when administered, have produced that immediate and sensible (even if incomplete) amelioration that we expect to see in cases where they have a beneficial influence.

55. The same may be said of tonics and iron. I have never met with such marked anatomical alterations as in cases which had been freely treated with a mixture containing muriated tincture of iron and hydrochloric acid. It does not necessarily follow from this that such remedies may never be required; but they should not be used indiscriminately and recklessly.

56. It is contrary to the ordinary rules of our art to interfere with the local development of blood-poisons, except for special reasons.

57. The faucial exudation of diphtheria is to be considered as the local manifestation of a general disease.

58. Interference with it will not prevent its reproduction, nor will it prevent laryngeal complication, nor will it prevent the supervention of grave constitutional disorder. It is, besides, exceedingly irksome to young patients.

59. We are justified in interfering with the throat exudation

when there is excessive fetor, or when it is so copious as to interfere with respiration or deglutition---not otherwise.

60. If the croup always extend below the bifurcation of the trachea, tracheotomy is but a forlorn hope; as such it may be right to resort to it in some cases.*

61. I am not satisfied with that explanation of the secondary paralytic affections which attributes them to reflex irritation. Possibly minute dissection might discover some organic change in (a) the nervous centres, (b) the nervous periphery, or (c) the muscular tissues.

62. Albuminuria may or may not be present in cases of diphtherical paralysis.

63. Cases of paralysis progress so slowly when treated simply by quinine and other tonics as to lead to the supposition that these drugs exert no direct influence upon this sequela, which probably in such cases wears itself out.

64. I believe that I have obtained more speedy results with eliminants---as iodide of potassium, iodide of iron, and bichloride of mercury with bark.

65. Blisters to the top of the sternum, if applied early, seem to exercise a most beneficial influence upon the paralysis of the palate.

66. Paralysis may follow, as kidney complication may attend, slight as well as severe cases of diphtheria. In one case I have heard that the paralysis has lasted two years, and may be considered permanent.

67. I am acquainted with one case in which the patient has recovered, but in which albuminuria is still occasionally present, four years after the primary attack.

* According to M. Roger, twenty per cent. of the children operated upon at the Hôpital des Enfants Malades in Paris recover.---*Archives Générales de Médecine*, April, 1862.

A CASE OF AORTIC ANEURISM,

IN WHICH A COMMUNICATION WITH THE PULMONARY ARTERY
WAS RECOGNISED DURING LIFE BY PHYSICAL SIGNS.*

SINCE the appearance of Dr. *Thurnam's* memoir but little has been added to our knowledge of varicose aneurism within the great cavities.

Though such cases are certainly not common, yet they are sufficiently so to make it desirable that we should be able to recognise them during life.

When the communication has been between the aorta and either of the *venæ cavæ* at any distance from the heart, the nature of the disease has not been usually very obscure. In the only case which I have seen of this class, the opening was into the superior vena cava. Though the patient was only seen once I had no great difficulty in making a correct diagnosis. The opinion formed was confirmed by *post mortem* examination.

Communications with any of the great vessels close to the heart present more difficulty for various reasons. Perhaps the most important is that aneurisms originating so near the heart, as those usually do, rarely attain any great size, and hence the pressure phenomena, upon which the diagnosis of aneurism mainly rests, are but ill developed.

In the present case the diagnosis was rather of a preternatural communication between the aorta and pulmonary artery probably aneurismal, than directly of aneurism. And it is extremely doubtful whether the aneurism could have been discovered previous to the establishment of the abnormal communication between it and the pulmonary artery.

* This paper is reprinted (with alterations) from the *Transactions of the Royal Medical and Chirurgical Society*, by the permission of the Council.

The diagnostic success here obtained is certainly an encouragement to make the attempt to unravel such cases hereafter. It will also be an assistance to our future efforts, since the acoustic phenomena were those we might naturally expect to attend such physical conditions, and are therefore pretty certain to be present in all the cases of which the anatomical conditions are nearly similar. This belief is fortified by the fact that in Dr. *Hughes Bennett's* case, where the lesions were nearly the same, the physical signs also corresponded. And although Dr. *Bennett* did not come to any precise diagnosis during life, he nevertheless considers with me that the relation between the sounds heard during life and the lesions discovered after death was evident. He says that there was "evidence of a profound lesion of the heart, although its nature was very mysterious, the more so as no thrill or tremor was detected. The case, however, was at once made clear, and the nature of the sounds explained by the examination of the body after death.

James Selwood, æt. 35, married, a porter in the Parcels Office at the New Street Railway Station, applied at the *Birmingham* General Dispensary, on May 1st, 1860. He was a fine-looking, well-made man, and complained of slight cough, some general debility, and a little loss of flesh. These symptoms had been coming on for several months. Suspecting phthisis, I stripped him to examine the lungs. Not finding any sign of disease in the anterior portions of these organs, I applied the stethoscope to the heart, and directly heard sounds which convinced me that the case was not one of ordinary valvular disease. I therefore recommended the patient to enter the *Queen's Hospital*, under my care, which he did in a few days. I found that for four years he had suffered much from piles, and about November, 1859, had lost as much as a pint of blood in a day, and, ever since, the losses have been considerable. To these fluxes he attributed the debility and wasting which induced him to consult me. About Christmas, 1859, his duties, in calling over the parcels, &c., being at that time very onerous, he suffered for a day or two from hoarseness, and has since often felt a rising in the throat. Two weeks before I first saw him, while wheeling a heavy truck across the line, an engine ran up, and, to avoid it, he was obliged to make a violent

and sudden spring; he directly felt very faint, and was compelled to sit down for some time, but thought no more about it. He had never had any palpitation. His appetite was good, and he slept well. He had a little cough, with expectoration of watery mucus, and slight dyspnœa on exertion; but the cough was most troublesome on lying down.

Physical examination showed that the cardiac dulness was increased in the vertical direction. The apex could be distinctly seen and felt beating in the sixth intercostal space, and the heart was also to be seen beating in the fifth. Over the cartilage of the fourth left rib two loud murmurs were heard, instead of the usual cardiac sounds; that, with the second sound, being of a hissing character, and so prolonged as to continue till the commencement of the next ventricular systole. At this same spot a very considerable purring tremor accompanied the second murmur. The first murmur was of a loud bellows character. Both murmurs were audible as high as the bifurcation of the common carotids, in the back, and over all the upper part of the chest; they did not seem to be peculiarly propagated towards the left subclavicular space. At the apex of the heart a single murmur only was to be heard, and this evidently attended, or rather replaced, the cardiac first sound; it could be traced easily down to the ensiform cartilage. At the apex, the cardiac second sound was very distinct and quite natural; no trace of murmur.

I found no venous distension or pulse. The pulsation of the carotids was very visible, particularly on the left side, and marked by some, though not considerable, thrill. The heart's action was quiet and regular.

The only abnormal physical sign in the lungs was some mucous râles at the base of each, equally on either side. Pupils contracted, but mobile; liver enlarged, no icterus; urine normal.

From this combination of physical signs, I concluded---

1st. That blood escaped either from the aorta or the pulmonary artery during their systole, from the loud hissing, prolonged murmur replacing the second sound at the base of the heart.

2nd. That it was probably from the aorta that the blood escaped, from the propagation of the sound up the arteries of the neck, and their visible pulsation and sensible thrill.

3rd. That the blood did not regurgitate into either ventricle, from the absence of any regurgitant murmur at the apex of the heart, where, on the contrary, an ordinary second sound was audible. It is true that slight regurgitant murmur is not necessarily conveyed to the apex of the heart; but I have never yet found it absent there, except when the murmur was very slight, whilst in this case the murmur was very loud and hissing at its point of origin.

4th. That the blood probably regurgitated into one of the auricles, or into the pulmonary artery.

5th. That it did not regurgitate into the left auricle; inasmuch as, had it done so, we should have found more decided pulmonary engorgement, and hæmoptysis rather than hæmorrhoids or hepatic enlargement.

6th. That the opening was rather into the pulmonary artery than into the right auricle; because aneurisms more frequently perforate the former. In eighteen cases of varicose aneurism recorded by Dr. *Thurnam*, eleven had perforated the artery, and only seven other parts, even including cases of communication with the superior and inferior venæ cavæ. Of twenty-nine cases collected by Dr. *Sibson*---

17 opened into the pulmonary artery.		
6	„	right auricle.
3	„	right ventricle.
3	„	left ventricle.
0	„	left auricle.
<hr/>		
29		

In seven others the aneurism had opened into the vena cava descendens.

Further, the frémissment was to the left of the sternum, whereas in recorded cases of openings into the right auricle the frémissment presented its maximum intensity at the right of the sternum.

7th. That the communication was probably owing to aneurismal perforation of the aorta at or near its origin. Because there was no history of cyanosis to indicate any congenital malformation of the heart. The increased vertical dulness, age, formation, and

occupation of the patient, as well as some points of his history, lent strength to this view.

8th. That the aneurism sprang from the root of the aorta, or near it.

To proceed now with the narration of the case.

No change took place in the physical signs during his residence in the hospital of about three weeks, except that after a considerable hæmorrhoidal loss the murmurs and frémissément all became intensified; they, however, soon reverted to their former condition.

At his urgent request that something should be done for the piles, I allowed Mr. *Wilders*, our able house-surgeon, to touch them with nitric acid. After this they bled less, though the hæmorrhage was never completely suppressed, nor indeed did I wish that it should be.

He declared that he was quite well, except that his breathing was a little short. I could not induce him to remain longer in the hospital, as he was determined to resume his employment, which he accordingly did.

Upon the morning of the 14th of June, 1860, having been at work all night, he was seized about six a.m. with præcordial oppression and faintness, such as he had never previously experienced. Nevertheless, after getting some brandy and lying down for a couple of hours, he was able to walk home, a distance of about a mile. After that he became rapidly worse, and was seen by Mr. *Pemberton*, who "found him with laborious breathing, and an intense expression of anxiety, referring his suffering to a load at the epigastrium. The hand placed over the chest in the cardiac region experienced a purring sensation, clearly and distinctly marked. Sounds---these were characterised by loud, continuous, double-rushing sounds audible all over the cardiac region, but more intensely so at the base of the heart and up the aorta. There was entire absence of superficial venous distension; hæmorrhage, continuous and arterial, from the hæmorrhoidal veins. The condition of the patient varied only in the occasional abatement of his feelings of oppression.

"*Treatment.*---Brandy, ether, and counter-irritation.

"He continued much the same until the morning of the 28th

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amount of strength to that theory. It was employed, secondarily, to indicate the exact position of this communication; at the same time, even in its absence, the site of the second murmur would have given precisely as much information as the thrill itself. Nevertheless, were such a thrill, to our own knowledge, *suddenly* developed over the heart, it would have almost as great semeiotic value as it undoubtedly has in varicose aneurisms remote from the heart.

In cases of suspected varicose aneurism it should never be forgotten that thrill may be developed in distant arteries by cardiac disease. A striking instance of the importance of remembering this fact came under my notice some years ago.

A man received a wound in the right side of the neck, from which there was so copious an arterial hæmorrhage that the surgeon in attendance believed that the carotid had been opened. Finding on the man's recovery that there was very marked thrill and murmur at the site of the wound, he came to the conclusion that the vein also had been injured, and that a preternatural communication had consequently been established between it and the artery. When I saw the patient there was no doubt about the existence of loud murmur and great thrill; but upon placing my finger upon the left carotid for the purpose of comparison, I found there a thrill as distinct as that upon the right side. This led to an examination of the cardiac region and to the discovery of free aortic regurgitation and great hypertrophy of the heart, lesions which quite accounted for the cervical thrill, and soon afterwards proved fatal. *Post mortem* examination proved that a small artery only had been wounded, and that no arterio-venous communication existed. The freedom of the hæmorrhage depended no doubt upon the cardiac mischief; and the hard thrilling radial pulse, which was really an indication of aortic regurgitation, had been supposed to result from the amount of hæmorrhage and the consequent hæmorrhagic reaction.

